

Power Optimizer

For Europe

P650 / P701 / P730 / P800p / P801 / P850 / P950 / P1100



POWER OPTIMIZER

PV power optimization at the module level

The most cost-effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Balance of System cost reduction; 50% less cables, fuses and combiner boxes, over 2x longer string lengths possible
- Fast installation with a single bolt
- Advanced maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety
- Use with up to two PV modules connected in series or in parallel

Power Optimizer

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P650 / P701 / P730 / P801

| Power Optimizer Model (Typical Module Compatibility) | P650 (for up to 2 x 60-cell PV modules) | P701 (for up to 2 x 60/120-cell PV modules) | P730 (for up to 2 x 72-cell PV modules) | P801 (for up to 2 x 72/144 cell PV modules) | |
|---|---|--|--|--|---------|
| INPUT | | | | | |
| Rated Input DC Power ⁽¹⁾ | 650 | 700* | 730** | 800 | W |
| Connection Method | Single input for series connected modules | | | | |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 96 | | 125 | | Vdc |
| MPPT Operating Range | 12.5- 80 | | 12.5- 105 | | Vdc |
| Maximum Short Circuit Current per Input (Isc) | 11 | 11.75 | 11** | 11.75 | Adc |
| Maximum Efficiency | 99.5 | | | | % |
| Weighted Efficiency | 98.6 | | | | % |
| Overvoltage Category | II | | | | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER) | | | | | |
| Maximum Output Current | 15 | | | | Adc |
| Maximum Output Voltage | 80 | | | | Vdc |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF) | | | | | |
| Safety Output Voltage per Power Optimizer | 1 ± 0.1 | | | | Vdc |
| STANDARD COMPLIANCE | | | | | |
| EMC | FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 - Class B, EN 55011 - Class A | | | | |
| Safety | IEC62109-1 (class II safety) | | | | |
| RoHS | Yes | | | | |
| Fire Safety | VDE-AR-E2100-712:2013-05 | | | | |
| INSTALLATION SPECIFICATIONS | | | | | |
| Compatible SolarEdge Inverters | Three phase inverters SE16K & larger ⁽²⁾ | | | | |
| Maximum Allowed System Voltage | 1000 | | | | Vdc |
| Dimensions (W x L x H) | 129x153 x 42.5 / 5.1 x 6 x 1.7 | | 129x153 x 49.5 / 5.1 x 6 x 1.9 | | mm / in |
| Weight | 834 / 1.8 | | 933 / 2.1 | | gr / lb |
| Input Connector | MC4 ⁽³⁾ | | | | |
| Input Wire Length | 0.16 / 0.52 | | 0.16 / 0.52, 0.9 / 2.95 ⁽⁴⁾ | | m / ft |
| Output Connector | MC4 | | | | |
| Output Wire Length | Portrait orientation: 1.2 / 3.9 | | | | |
| | Landscape orientation: 1.8 / 5.9 | | Landscape orientation: 2.2 / 7.2 | | m / ft |
| Operating Temperature Range ⁽⁵⁾ | -40 to +85 / -40 to +185 | | | | °C / °F |
| Protection Rating | IP68 / NEMA6P | | | | |
| Relative Humidity | 0 - 100 | | | | % |

* For P701 models manufactured after work week 06/2020, the rated DC input is 740W

** For P730 with manufactured date greater than working week 06 of 2020 the rated DC input is 760W and maximum Isc per Input is 11.75A

The manufacture code is indicated in the Power Optimizer's serial number. Example: S/N S10620A-xxxxxxx (working week 06 in 2020)

(1) Rated power of the module at STC will not exceed the Power Optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed

(2) For compliance with EN 55011 class A (where required), installation shall be done with inverter 20kVA or larger, and comply with the requirements in the EMC section of the installation manual

(3) For other connector types please contact SolarEdge

(4) Longer inputs wire lengths are available for use with split junction box modules. (For 0.9m/2.95ft order P730-xxxLxxx)

(5) For ambient temperature above +70°C/ +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

| PV System Design Using a SolarEdge Inverter ⁽⁶⁾⁽⁷⁾⁽⁸⁾ | | 230/400V Grid SE25K*, SE33.3K* | 230/400V Grid SE27.6K* | 230/400V Grid SE30K* | 277/480V Grid SE33.3K*, SE40K* | |
|--|------------------|-----------------------------------|---------------------------|-------------------------|-----------------------------------|---|
| Compatible Power Optimizers | | P650, P701, P730, P801 | P650, P701, P730, P801 | P650, P701, P730, P801 | P650, P701, P730, P801 | |
| Minimum String Length | Power Optimizers | 14 | 14 | 15 | 14 | |
| | PV Modules | 27 | 27 | 29 | 27 | |
| Maximum String Length | Power Optimizers | 30 | 30 | 30 | 30 | |
| | PV Modules | 60 | 60 | 60 | 60 | |
| Maximum Continuous Power per String | | 11250 | 11625 | 12750 | 12750 | W |
| Maximum Allowed Connected Power per String ⁽⁹⁾ (Permitted only when the difference in connected power between strings is 2,000W or less) | | 13500 | 13875 | 15000 | 15000 | W |
| Parallel Strings of Different Lengths or Orientations | | Yes | | | | |

* The same rules apply for Synergy units of equivalent power ratings, that are part of the modular Synergy Technology inverter

(6) P650/P701/P730/P801 can be mixed in one string only with P650/P701/P730/P801

(7) For each string, a Power Optimizer may be connected to a single PV module if 1) each Power Optimizer is connected to a single PV module or 2) it is the only Power Optimizer connected to a single PV module in the string

(8) For SE25K and above, the minimum STC DC connected power should be 11KW

(9) To connect more STC power per string, design your project using [SolarEdge Designer](#)

Power Optimizer

For Europe

P800p / P850 / P950 / P1100

| Power Optimizer Model (Typical Module Compatibility) | P800p (for up to 2 x 96-cell 5" PV modules) | P850 (for up to 2 x high power or bi-facial modules) | P950 (for up to 2 x high power or bi-facial modules) | P1100 (for up to 2 x high power or bi-facial modules) | |
|---|---|---|---|--|---------|
| INPUT | | | | | |
| Rated Input DC Power ⁽¹⁾ | 800 | 850 | 950 | 1100 | W |
| Connection Method | Dual input for independently Connected modules | | Single input for series connected modules | | |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 83 | 125 | | | Vdc |
| MPPT Operating Range | 12.5- 83 | 12.5- 105 | | | Vdc |
| Maximum Short Circuit Current per Input (Isc) | 7 | 14.1* | | 14.1 | Adc |
| Maximum Efficiency | | | | | % |
| Weighted Efficiency | | | | | % |
| Overvoltage Category | II | | | | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER) | | | | | |
| Maximum Output Current | 18 | 18 | | | Adc |
| Maximum Output Voltage | 80 | | | | Vdc |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF) | | | | | |
| Safety Output Voltage per Power Optimizer | 1 ± 0.1 | | | | Vdc |
| STANDARD COMPLIANCE | | | | | |
| EMC | FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 - Class B, EN 55011 - Class A | | | | |
| Safety | IEC62109-1 (class II safety) | | | | |
| RoHS | Yes | | | | |
| Fire Safety | VDE-AR-E2100-712:2013-05 | | | | |
| INSTALLATION SPECIFICATIONS | | | | | |
| Compatible SolarEdge Inverters | Three phase inverters SE16K & larger ⁽²⁾ | | | Three phase inverters SE25K & larger | |
| Maximum Allowed System Voltage | 1000 | | | | Vdc |
| Dimensions (W x L x H) | 129x 168 x 59 / 5.1x6.61 x 2.32 | 129x162x59 / 5.1 x 6.4 x 2.32 | | | mm/in |
| Weight | 1064 / 2.3 | | | | gr/lb |
| Input Connector | MC4 ⁽³⁾ | | | | |
| Input Wire Length | 0.16 / 0.52 | 0.16 / 0.52, 0.9 / 2.95, 1.3 / 4.26, 1.6 / 5.24 ⁽⁴⁾ | 0.16 / 0.52, 1.3 / 4.26, 1.6 / 5.24 ⁽⁴⁾ | 0.16 / 0.52, 1.3 / 4.26 ⁽⁴⁾ | m/ft |
| Output Connector | MC4 | | | | |
| Output Wire Length | Portrait orientation: 1.2 / 3.9 | | | 2.4 / 7.8 | m/ft |
| | Landscape orientation: 1.8 / 5.9 | Landscape orientation: 2.2 / 7.2 | | | |
| Operating Temperature Range ⁽⁵⁾ | -40 to +85 / -40 to +185 | | | | °C / °F |
| Protection Rating | IP68 / NEMA6P | | | | |
| Relative Humidity | 0 - 100 | | | | % |

* For P850/P950 models manufactured in work week 06/2020 or earlier, the maximum Isc per input is 12.5A. The manufacture code is indicated in the Power Optimizer's serial number
Example: S/N SJ0620A-xxxxxxx (work week 06 in 2020)

(1) Rated power of the module at STC will not exceed the Power Optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed

(2) For compliance with EN 55011 class A (where required), installation shall be done with inverter 20kVA or larger, and comply with the requirements in the EMC section of the installation manual

(3) For other connector types please contact SolarEdge

(4) Longer inputs wire length are available for use with split junction box modules

(For 0.9m/2.95ft order P801/P850-xxxLxxx. For 1.3m/2.95ft order P850/P950/P1100 -xxxXxxx. For 1.6m/5.24ft order P850/P950-xxxYxxx)

(5) For ambient temperature above +70°C/+158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

| PV System Design Using a SolarEdge Inverter ⁽⁶⁾⁽⁷⁾⁽⁸⁾ | | 230/400V Grid SE25K* | 230/400V Grid SE27.6K* | 230/400V Grid SE30K* | 230/400V Grid SE33.3K* | 277/480V Grid SE33.3K*, SE40K* |
|---|------------------|--|--|--|--|--|
| Compatible Power Optimizers | | P800p, P850, P950, P1100 | P800p, P850, P950, P1100 | P800p, P850, P950, P1100 | P800p, P850, P950, P1100 | P800p, P850, P950, P1100 |
| Minimum String Length | Power Optimizers | 14 | 14 | 15 | 14 | 14 |
| | PV Modules | 27 | 27 | 29 | 27 | 27 |
| Maximum String Length | Power Optimizers | 30 | 30 | 30 | 30 | 30 |
| | PV Modules | 60 | 60 | 60 | 60 | 60 |
| Maximum Continuous Power per String | | 13500 | 13950 | 15300 | 13500 | 15300 |
| Maximum Allowed Connected Power per String ⁽⁹⁾ (Permitted only when the difference in connected power between strings is 2,000W or less) | | 1 string - 15750 2 strings or more - 18500 | 1 string - 16200 2 strings or more - 18950 | 1 string - 17550 2 strings or more - 20300 | 2 strings or less - 15750 3 strings or more - 18500 | 2 strings or less - 17550 3 strings or more - 20300 |
| Parallel Strings of Different Lengths or Orientations | | Yes | | | | |

* The same rules apply for Synergy units of equivalent power ratings, that are part of the modular Synergy Technology inverter

(6) P800p/P850/P950/P1100 can be mixed in one string only with P800p/P850/P950/P1100

(7) For each string, a Power Optimizer may be connected to a single PV module if 1) each Power Optimizer is connected to a single PV module or 2) it is the only Power Optimizer connected to a single PV module in the string


(8) For SE25K and above, the minimum STC DC connected power should be 11KW

(9) To connect more STC power per string, design your project using SolarEdge Designer

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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